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Patent Procurement
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607 Fourteenth Street N.W.
Washington, DC 20005-2011

EXAMINER

RALIS, STEPHEN J

ART UNIT	PAPER NUMBER
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3742

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10/16/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/656,900	Applicant(s) AXINTE ET AL.	
	Examiner STEPHEN J. RALIS	Art Unit 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 81,82 and 86-105 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 81,82 and 86-105 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Applicant is respectfully requested to provide a location within the disclosure to support any further amendments to the claims due to when filing an amendment an applicant should show support in the original disclosure for new or amended claims. See MPEP § 714.02 and § 2163.06 ("Applicant should specifically point out the support for any amendments made to the disclosure.").

Response to Amendment/Arguments

3. Applicant's arguments filed 08 July 2008 have been fully considered but they are not persuasive as set forth below.

Drawings

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the electrical switch located on the handheld body, *to selectively disconnect the detachable solder tip and the light from the electrical power source* must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure

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number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 81, 82 and 86-105 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In the instant application the recitation to “an electrical switch located on the handheld body, *to selectively disconnect the detachable solder tip and the light from the electrical power source*” does not have support in the instant disclosure to allow one

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of ordinary skill in the art to build or enable such a recitation. Therefore, the recitation to “an electrical switch located on the handheld body, *to selectively disconnect the detachable solder tip and the light from the electrical power source*” is deemed non-enabling.

7. Claims 81, 82 and 86-105 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In the instant case, the recitation to “an electrical switch located on the handheld body, *to selectively disconnect the detachable solder tip and the light from the electrical power source*” does not have support in the instant disclosure. The instant application discloses the light (4) having a switch (5) to activate the light (4) (paragraphs 28-29). Applicant further discloses the switch (5) being in series with the light (4) and not being to selectively disconnect the detachable soldering tip from the electrical power source (see Figure 5). Therefore, the above noted recitation is deemed new matter.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 81, 82, 92, 93, 95-97, 99, 100, 102 and 103 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albietz (U.S. Patent No. 2,210,352) in view of Walton (U.S. Patent No. 3,899,654) and Kitsuda (U.S. Patent No. 2,092,218).

Albietz discloses a handheld body (see Figures 1, 2) adapted to house an electrical power storage source (power cable); a detachable solder tip (guide holder a having carbon electrode tip *b* and metal pin electrode *c*; column 2, lines 1-5; 28-41)

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detachably affixed to the handheld body and electrically connectable to the electrical power storage source (power cable) (see Figure 1, 2), the detachable solder tip (guide holder *a*) having first and second electrodes disposed in a spaced apart manner at a terminal end of the solder tip (carbon electrode tip *b* and metal pin electrode *c*), to be shorted upon an electrically conductive material external to the cordless soldering tool in electrical communication with the first and second electrodes to enable electrical current to flow through the detachable solder tip (column 2, line 28 –column 3, line 16); a light (electric bulb *g*) located on the handheld body, wherein the light is oriented such that the light can illuminate a working surface proximate the detachable solder tip (column 2, lines 21-27; column 4, claim 3); an electrical switch being the plug cable into the wall.

With respect to the limitations of claims 95 and 99, Albietz explicitly discloses the dual electrode structure (carbon electrode *b* and metal pin electrode *c*) being place into contact with the two pieces to soldered together in addition to heat being transferred to the two pieces to soldered and “onto the solder” at the point of soldering (column 2, lines 31-41).

With respect to the limitations of claims 96 and 97, Albietz explicitly discloses the soldering device only heating when placed into contact with the workpieces and the solder (column 2, line 28 –column 3, line 16). Therefore, Albietz fully meets “the detachable solder tip generates heat during the time that a short is created across the electrodes” and “the detachable solder tip cools when the short across the first and second electrodes is removed” given its broadest reasonable interpretation.

With respect to the limitations of claim 100, Albietz explicitly discloses the guide holder (*a*) carrying the carbon electrode (*b*) on one arm and insulating the other arm, the solder stick (*c*), from the carbon electrode (*b*) (column 2, lines 1-5).

Albietz discloses all of the limitations of the claimed invention, as previously set forth, except for the device being cordless with the electrical power supply being a battery.

However, a portable, cordless handheld soldering device with a battery as an electrical power storage source is known in the art. Walton, for example teach, a cordless soldering tool (Title) comprising: a handheld body (elongated body 11) adapted to house an electrical power storage source (battery means 25; see Figures 1, 4). Walton further teaches the advantage of such a configuration provides the ability to remove the costly electrically inefficient transformer and cord configuration, thereby increasing the overall operational efficiency and reducing the manufacturing costs of the soldering iron. It is further known in the art that making an old device portable or movable without producing any new and unexpected result involves only routine skill in the art.

Albietz further discloses all of the limitations of the claimed invention, as previously set forth, except for an electrical switch located on the handheld body, to selectively disconnect the detachable solder tip and the light from the electrical power source, such that when the switch is closed, the power source powers the light and additionally powers the detachable solder tip when a short is created across the first

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and second electrodes to allow electrical current to flow between the first and second electrodes.

However, a handheld, cordless, portable heated tip device comprising an electrical switch for selectively powering the light with powering the heated tip is known in the art. Kitsuda, for example, teaches an embodiment in which the lamp (6) and the igniter unit (7) being operated alternatively or simultaneously by manipulating the switch (15) and/or the switch comprising the spring contact 18 (column 2, lines 25-31; column 3, lines 1-16). It is further known in the art that to provide a single switch to activate and supply power/electrical current to the various elements of a portable electrical device provides a means to reduce the operational complexity of the device, thereby improving the overall functionality.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the power cord configuration of Albietz with the cordless and battery storage device of Walton in order to provide the ability to remove the costly electrically inefficient transformer and cord configuration, thereby increasing the overall operational efficiency and reducing the manufacturing costs of the soldering iron. In addition, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the power cord configuration of Albietz with a cordless and battery storage portable functionality, since it has been held that making an old device portable or movable without producing any new and unexpected result involves only routine skill in the art. Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Albietz

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with the simultaneous activation of a heated tip and light by an electrical switch in order to provide a means to reduce the operational complexity of the device, thereby improving the overall functionality.

With respect to the limitation of claims 82 and 103, Walton teaches an electrical power storage device being a battery (column 2, lines 47-60; see Figure 4) as well as Kitsuda (battery 2; see Figure 1).

With respect to the limitations of claim 102, Kitsuda teaches the lamp (6) and the igniter unit (7) being operated alternatively or simultaneously by manipulating the switch (15) and/or the switch comprising the spring contact 18 (column 2, lines 25-31; column 3, lines 1-16). Hence when the electrical switch (15 or 18) is manipulated to turn OFF the lamp (6) and the igniter unit (7), the switch (15 or 18) would be open an electricity would not be transferred to the light. Therefore, Kitsuda fully meets “when the electrical switch is opened, electricity is not transmitted to the light” given its broadest reasonable interpretation.

12. Claims 86, 87, 89, 91, 94, 98 and 104 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albietz (U.S. Patent No. 2,210,352) in view of Walton (U.S. Patent No. 3,899,654) and Kitsuda (U.S. Patent No. 2,092,218) as applied to claims 81, 82, 92, 93, 95-97, 99, 100, 102 and 103 above, and further in view of Fiel et al. (U.S. Patent No. 5,414,927) as evidenced by Funari (U.S. Patent No. 4,171,477).

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Albietz in view of Walton and Kitsuda discloses all of the claimed limitations, as previously set forth, except for the detachable soldering tip being graphite material having an electrical resistivity of 1,500 micro-Ohm-cm or greater, a flexural strength of at least about 1,500 psi, and a density of about 1.5 to 1.75 g/cc; and the soldering tip can be heated to 600 °F.

However, heating element having an electrical resistivity of 1,500 micro-Ohm-cm or greater, a flexural strength of at least about 1,500 psi, and a density of about 1.5 to 1.75 g/cc, as described by Fiel et al. and furthermore evidenced by Funari, is known in the art.

Fiel et al. teach a heating device (13) being made of a graphite material having an electrical resistivity of 1,500 micro-Ohm-cm or greater (450 –1200 micro-ohms-in converted to 1143 – 3048 micro-ohms-cm; see Table I), a flexural strength of at least about 1,500 psi (most carbon and graphite materials having 4000-6000 psi; invention 10000-18000 psi; column 4, lines 5 – page 5, line 7; column 10, claim 9; see Table I) and a density of about 1.5 to 1.75 g/cc (of at least about 1.75 g/cc; column 10, claim 9; see Table I), in addition to. Fiel et al. further teach an advantage of using the graphite material being isotropic properties, such as electrical resistivity, thereby minimizing hot spots and avoiding the need for additional controlling of orientation of the fabricated element (column 4, lines 51-57). In addition, Fiel et al. disclose the advantage of flexibility as well as strength of the material, thereby providing the ability to easily shape elements without significant cracking (column 4, line 58 – column 5, line 7).

Funari teaches the advantage of using a soldering tip (column 9, lines 10-20; see Figure 6) constructed of a material that may include a large range of micro-ohm-cm based on the material, where the material of notability is a material combination of carbide and graphite having a resistivity of 3200 micro-ohms-cm and up (column 7, line 58 – column 8, line 12). In addition, Funari teaches the soldering tips utilizing the a material noted above provides heat generated at the soldering tips of approximately 800 °C (1472 °F) , 750 °C (1382 °F) and 400 °C (752 °F) in various embodiments. Funari further teaches the advantage of such a material provides a soldering tip that heats up simultaneously as the soldering surface, thereby preventing the soldering tip from drawing off heat generated to the soldering surface; and to provide a soldering tip that heats up primarily because of contact resistance to the power generated by the current passing through the contact resistance, not the soldering surface itself, thereby providing better soldering fusion joints (column 4, lines 8-64).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the detachable soldering tip of Albietz in view of Walton and Kitsuda with the graphite heating element of Fiel et al. to minimize hot spots and avoid the need for additional controlling of orientation of the fabricated element as well as provide the ability to easily shape elements without significant cracking, since as evidenced by Funari, substituting a graphite heating element will provide a soldering tip heating element that heats up simultaneously as the soldering surface and that heats up primarily because of contact resistance to the power

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generated by the current passing through the contact resistance, not the soldering surface itself, thereby providing better soldering fusion joints.

13. Claims 88, 90 and 105 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albietz (U.S. Patent No. 2,210,352) in view of Walton (U.S. Patent No. 3,899,654) and Kitsuda (U.S. Patent No. 2,092,218), Fiel et al. (U.S. Patent No. 5,414,927) and Funari (U.S. Patent No. 4,171,477) as applied to claims 86, 87, 89, 91, 94, 98 and 104 above, and further in view of Sweetland (U.S. Patent No. 5,394,910).

Albietz in view of Walton, Kitsuda, Fiel et al., and Funari discloses all of the claimed limitations, as previously set forth, except for the detachable soldering tip having a thermal conductivity of less than or equal to 10 BTU/hr-ft-degree.

Sweetland teaches that typical carbon and graphite used in high temperature applications have an average thermal conductivity of 8 BTU/hr-ft-degree F, Sweetland further teaches that some applications prefer high thermal conductivity ranges such as 50 or 60 BTU/hr-ft-degree F. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to make having a thermal conductivity of less than or equal to 10 BTU/hr-ft-degree F, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. Furthermore, to provide the detachable soldering tip having a thermal conductivity of less than or equal to 10 BTU/hr-ft-degree would have been a mere engineering expediency as Sweetland clearly teaches the use

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of carbon and graphite in high temperature applications is dependent on the application in which the element is used.

14. Claim 101 is rejected under 35 U.S.C. 103(a) as being unpatentable over Albietz (U.S. Patent No. 2,210,352) in view of Walton (U.S. Patent No. 3,899,654) and Kitsuda (U.S. Patent No. 2,092,218) as applied to claims 81, 82, 92, 93, 95-97, 99, 100, 102 and 103 above, and further in view of Pachschwöll (U.S. Patent No. 4,935,600).

Albietz in view of Walton and Kitsuda discloses all of the limitations, as previously set forth, except for the light being a light emitting diode.

However, light emitting diodes being utilized in soldering iron applications is known in the art. Pachschwöll, for example, teaches a lamp being an LED (column 4, lines 1-8). It is known in the art the utilization of LEDs for lamp application provides the ability to reduce the necessary power required to activate and maintain a lamp application as well as increasing the operational longevity of the lamp device due to LEDs inherent longevity characteristic. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the lamp of the Albietz in view of Walton and Kitsuda with the usage of an LED instead in order to provides the ability to reduce the necessary power required to activate and maintain a lamp application as well as increasing the operational longevity of the lamp device due to LEDs inherent longevity characteristic, thereby providing a more efficient soldering device.

Remarks

15. With respect to applicants' argument/reply that the declaration is not defective, the argument/reply is deemed moot due to Office Gazette 1327 OG 112, published 12 February 2008, stating that such language (i.e. material to examination) is acceptable for applications filed prior 01 June 2008 and not thereafter.

16. With respect to applicants' argument/reply that Kitsuda does not teach a switch for powering both a light and a heated tip at the same time, the examiner respectfully disagrees. Kitsuda explicitly teaches that the lamp (6) and the igniter unit (7) being operated alternatively or simultaneously by manipulating the switch (15) and/or the switch comprising the spring contact 18 (column 2, lines 25-31; column 3, lines 1-16). Kitsuda clearly teaches two embodiments: one being where two switches (15 and 18) alternatively turn on each respective device (lamp 6 and igniter 7) and the second being where a single switch (15 or 18) may be used to simultaneously operate the respective devices (lamp 6 and igniter 7). Therefor, Kitsuda fully meets "an electrical switch ... to selectively disconnect the detachable solder tip and the light from the electrical power source" given its broadest reasonable interpretation.

Conclusion

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHEN J. RALIS whose telephone number is (571)272-6227. The examiner can normally be reached on Monday - Friday, 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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October 8, 2008